



COMPILED JANUARY 2018

CENTRE FOR HEALTHCARE-ASSOCIATED INFECTIONS, ANTIMICROBIAL RESISTANCE AND MYCOSES

Emergomyces africanus Frequently Asked Questions

1. What is *Emergomyces africanus*?

- *Emergomyces species* (formerly called *Emmonsia species*) are a group of fungi that opportunistically cause disease among persons with weakened immune systems worldwide
- *Emergomyces africanus* is a **newly-discovered fungus** within this group and so far has only been found in southern Africa
- The **burden of disease caused by this fungus is very small** (fewer than 100 cases total to date) compared to other opportunistic infections that affect persons with advanced HIV disease, e.g. TB and cryptococcosis.
- *E. africanus* is a thermally-dimorphic fungus i.e. grows as a filamentous (thread-like) mould in the environment and as a yeast in infected human tissue.
- The environmental reservoir for this fungus is not yet known; however, it is presumed to be soil.
- Further studies are needed to establish the natural reservoir for this fungus

2. Who can get disease caused by *Emergomyces africanus*?

- This fungus has only been described to cause disease (known as emergomycosis) among **severely immunosuppressed HIV-infected persons** so far.
- **Healthy people are not known to be at risk of disease**
- The disease **cannot be spread person to person**

3. Where does *Emergomyces africanus* occur in southern Africa?

- Although patients with this fungal disease were initially detected in the Western Cape in 2013, cases have since been reported from **all provinces in South Africa and from Lesotho**.
- In a recent study, *E. africanus* was found in soil samples using molecular tests (but the fungus could not be cultured from soil). Most tested soil samples were from Western Cape (a convenience sample).

4. How is *Emergomyces africanus* disease (emergomycosis) acquired?

- This is not yet known. It is thought that disease is acquired **by inhalation of airborne parts** (propagules) of the fungus.
- One recent study conducted in one site in Cape Town (Schwartz I et al. PloS NTD 2018) demonstrated that airborne propagules of *E. africanus* could be detected; however, their ability to cause infection is unknown.

5. What are the signs and symptoms of disease in humans?



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- In the group of HIV-infected patients with very weakened immune systems, emergomycosis is a **multi-system disease** and patients most often present with widespread skin lesions, fever, loss of weight and pulmonary disease.

6. How is emergomycosis diagnosed?

- Many diagnostic labs, including NICD, have the capacity to make a diagnosis of emergomycosis – by **fungal culture** of tissues and/or body fluids and **molecular methods**.
- As skin lesions occur in almost all cases with disseminated disease, skin biopsy is a valuable test that can be used to diagnose a majority of patients.
 - Histopathologic finding: yeasts (2–7 µm in diameter) can be seen with fungal stains in majority of cases. Histopathologic findings alone are not sufficient to distinguish *Emergomyces* sp. from other dimorphic fungi.
 - Molecular testing using broad-range fungal PCR (from culture or tissue)
 - Fungal culture
- Many HIV clinicians/ dermatologists/ ID physicians are now aware of this disease and are doing tests to make the diagnosis.
- If HIV-infected persons are concerned about their exposure to this fungus, they should discuss with their doctor.

7. How is emergomycosis treated?

- This disease **can be treated using antifungal agents**
- In the absence of randomised-controlled clinical trials, and based on the data from an uncontrolled retrospective case series, the management of HIV-associated disseminated emergomycosis is recommended to follow the Infectious Diseases Society of America guidelines for the management of endemic mycoses in immunocompromised persons.
- In a small case series, the case-fatality ratio (CFR) was approx. 50%. However, this was a biased sample because a laboratory diagnosis is usually made among the sickest people and when the fungal disease is disseminated. It is possible that CFR would be lower if emergomycosis was diagnosed earlier and if other clinical syndromes were detected.

8. Where can I find more information?

- **Medical/clinical related queries:** NICD hotline +27 82 883 9920 (for use by healthcare professionals only)
- **Results and laboratory enquiries:** NICD Specimen Receiving Laboratory: +27 11 386 6404
- **Guidelines and other documents:** NICD website at www.nicd.ac.za under the 'Diseases A-Z' tab.